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Railway applications - Electric equipment for rolling stock - Part 5: Electrotechnical components - Rules for HV fuses

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/20

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**EN IEC 60077-5**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2019

ICS 45.060

Supersedes EN 60077-5:2003 and all of its amendments  
and corrigenda (if any)

English Version

**Railway applications - Electric equipment for rolling stock - Part  
5: Electrotechnical components - Rules for HV fuses  
(IEC 60077-5:2019)**

Applications ferroviaires - Équipements électriques du  
matériel roulant - Partie 5: Composants électrotechniques -  
Règles pour les fusibles à haute tension  
(IEC 60077-5:2019)

Bahnanwendungen - Elektrische Betriebsmittel auf  
Fahrzeugen - Teil 5: Elektrotechnische Bauteile - Regeln für  
Hochspannungssicherungen  
(IEC 60077-5:2019)

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60077-5:2019 (E)****European foreword**

The text of document 9/2539/FDIS, future edition 2 of IEC 60077-5, prepared by IEC/TC 9 "Electrical equipment and systems for railways" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60077-5:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-09-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-12-04

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60077-1	2017	Railway applications - Electric equipment for rolling stock - Part 1: General service conditions and general rules	EN 60077-1	2017
IEC 60077-2	2017	Railway applications - Electric equipment for rolling stock - Part 2: Electrotechnical components - General rules	EN 60077-2	2017
IEC 60269-1	2006	Low-voltage fuses - Part 1: General requirements	EN 60269-1	2007
+ A1	2009		+ A1	2009
+ A2	2014		+ A2	2014
IEC 60282-1	2009	High-voltage fuses - Part 1: Current-limiting fuses	EN 60282-1	2009
+ A1	2014		+ A1	2014
IEC 61373	-	Railway applications - Rolling stock equipment - Shock and vibration tests	EN 61373	-
ISO 3	-	Preferred numbers - Series of preferred numbers	-	-



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Edition 2.0 2019-10

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Railway applications – Electric equipment for rolling stock –  
Part 5: Electrotechnical components – Rules for HV fuses**

**Applications ferroviaires – Équipements électriques du matériel roulant –  
Partie 5: Composants électrotechniques – Règles pour les fusibles  
à haute tension**





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67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.



IEC 60077-5

Edition 2.0 2019-10

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Railway applications – Electric equipment for rolling stock –  
Part 5: Electrotechnical components – Rules for HV fuses**

**Applications ferroviaires – Équipements électriques du matériel roulant –  
Partie 5: Composants électrotechniques – Règles pour les fusibles  
à haute tension**

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## **RAILWAY APPLICATIONS – ELECTRIC EQUIPMENT FOR ROLLING STOCK –**

### **Part 5: Electrotechnical components – Rules for HV fuses**

#### FOREWORD

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International Standard IEC 60077-5 has been prepared by IEC technical committee 9: Electrical equipment and systems for railways.

This second edition cancels and replaces the first edition, issued in 2003. It constitutes a technical revision.

This edition includes the following main technical changes with regard to the previous edition:

- a) test method of test duty III for verification of breaking capacity is reviewed.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
9/2539/FDIS	9/2555/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This document should be read in conjunction with IEC 60077-1 and IEC 60077-2.

A list of all parts in the IEC 60077 series, published under the general title *Railway applications – Electric equipment for rolling stock*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

# RAILWAY APPLICATIONS – ELECTRIC EQUIPMENT FOR ROLLING STOCK –

## Part 5: Electrotechnical components – Rules for HV fuses

### 1 Scope

The purpose of this part of IEC 60077 is to give additional or amended rules for high voltage (HV) fuses as a supplement to those given by IEC 60077-2.

NOTE 1 In this document the term high voltage fuses is used in the context of the voltages used in the field of railway rolling stock.

The high voltage fuses concerned are those connected into power and/or auxiliary circuits. The nominal voltage of these circuits lies between 600 V DC and 3 000 V DC, according to IEC 60850. These fuses can also be used in auxiliary AC circuits up to a nominal voltage of 1 500 V.

NOTE 2 Certain of these rules, after agreement between the user and the manufacturer, are used for fuses installed on vehicles other than rail rolling stock such as mine locomotives, trolleybuses, etc.

This document together with IEC 60077-2 states specifically:

- a) the characteristics of the fuses;
- b) the service conditions with which the fuses comply with reference to:
  - operation and behaviour in normal service;
  - operation and behaviour in case of short circuit;
  - dielectric properties.
- c) the tests intended for confirming the compliance of the fuse with the characteristics under the service conditions and the methods adopted for these tests;
- d) the information marked on, or given with, the fuse.

This document does not cover parallel connection of fuses.

During preparation of this document, IEC 60269-1 and IEC 60282-1 have been considered and their requirements have been kept as far as possible.

This document makes reference to the general rules for electrotechnical components given in IEC 60077-2, but for general conditions reference is made directly to IEC 60077-1.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60077-1:2017, *Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules*

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IEC 60077-2:2017, *Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components – General rules*

IEC 60269-1:2006, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-1:2006/AMD1:2009

IEC 60269-1:2006/AMD2:2014

IEC 60282-1:2009, *High-voltage fuses – Part 1: Current-limiting fuses*

IEC 60282-1:2009/AMD1:2014

IEC 61373, *Railway applications – Rolling stock equipment – Shock and vibration tests*

ISO 3, *Preferred numbers – Series of preferred numbers*

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